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ABSTRACT

This study investigated the interrelationships among the development of role-taking skills, moral judgments, and sharing behavior of boys and girls in K-3. A total of 160 lower middle class white children (20 boys and 20 girls from each grade) participated in the study. Data were collected on four measures: (1) sharing candy with a friend, (2) role-taking on emotional responses to pictured situations, (3) moral judgments on Piagetian dilemmas with positive or negative consequences, and (4) sharing candy with a stranger. The results indicated that (1) role-taking ability was positively correlated with the use of intentionality in making moral judgments; (2) role-taking ability was positively correlated with sharing with a friend, sharing with a stranger (only for boys), and total sharing; and (3) the use of intentionality in moral judgments was positively correlated with sharing with friends. Both age and sex differences were found. (JMB)

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Developmental Changes and Interrelationships Among Role-taking, Moral Judgments and Children's Sharing

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DEVELOPMENTAL CHANGES AND INTERRELATIONSHIPS AMONG ROLE-TAKING,

MORAL JUDGMENTS AND CHILDREN'S SHARING

The major purpose of the present study was to investigate the interrelationships among the development of role-taking skills, moral judgments and sharing behavior of boys and girls in kindergarten, first, second and third grades.

Several investigators (Green & Schneider, 1974; Handlon & Gross, 1958; Midlarsky & Bryan, 1967; Staub & Feagans, 1969; Ugurel-Semin, 1952; & Wright, 1942) have reported that the amount of sharing and helping displayed by children between 4 and 12 years tends to increase with age. Recently, however, this finding was confirmed only when children were sharing candies they "deserved" rather than candies they did "not deserve" (Olejnik, 1974).

One possible explanation why older children appear to behave more altruistically is that since they are older they have had more opportunities to learn self-sacrificing responses by imitating adults and peers as well as having had more opportunities to be rewarded for their sharing and helping. In their review of self-sacrificing behavior by children, Bryan and London (1970) cited several studies which provided evidence for the influence of behavioral example and reinforcement on the donation behavior of children. However, in his review of the altruism research, Krebs (1970) noted that studies on the modeling of altruistic behavior have produced temporary effects rather than long term changes and that these studies have not demonstrated modeling effects which generalize to a variety of self-sacrifice situations. Krebs also pointed out that modeling was merely a description of behavioral sequences rather than an explanation for the behavior.

Just last month however, Philippe Rushton (1975) reported a study on the immediate and long-term effects of modeling, preaching and moral judgment on generosity in children and found that modeling was effective in influencing the donating behavior of children (7 to 11 years of age) not only immediately but also two months later. He concluded that "internalization" had occurred and also noted that there was a relationship between moral judgments and generosity.

This leads me to a second, more cognitive explanation for the apparent increase in the altruistic behavior of children as they get older, that is, there are developmental changes in children's cognitive thought processes which influence their moral judgments and behavior. According to Piaget (1932), the egocentric thought of young children prevents them from judging moral situations from any viewpoint other than their own and therefore limits their moral judgments and social interactions in a variety of activities. Piaget (1926), Flavell et al. (1968), Selman (1974) and others have investigated developmental changes in role-taking skills in children between four and fourteen years and have found that while signs of role-taking skills begin to develop around three years, it isn't until sometime during middle-childhood or even as late as early adolescence that children are capable of accurately taking the role of another person. Carolyn Shantz (1974) recently stated that "given the importance in our society of prosocial behavioral development, it is particularly critical that more systematic investigations occur on the impact of cognitive development on social behavior and social behavior on cognitive development."

Although there are interesting and apparent developmental changes in the sharing behavior of children and their role-taking skills, until recently, the relationship between these behavioral and cognitive changes has not been investigated. Rubin and Schneider (1973) reported positive relationships among moral judgments (S. Lee's adaptation of Kohlberg's moral judgment stories), communicative egocentrism (Glucksberg & Krauss, 1967) and two measures of altruism: 1) candy donation; and 2) helping a younger child. Their research however, focused on children at one age (7 years) rather than obtaining either cross-sectional or longitudinal data. Additional evidence for a relationship between role-taking and altruistic behavior was reported a few months ago by Krebs and Sturrup (1974) with a small sample of second and third grade children. However, there is still little evidence for any relationship between role-taking skills and sharing behavior for children under seven years, although the role-taking skills have already been developing.

The first hypothesis of the present study was that children between 5 and 8 years of age who are capable of accurately perceiving the emotional and cognitive aspects of another's position would be more altruistic than children who have not developed these abilities. And whether from an intuitive, theoretical or logical perspective, it is expected that role-taking skills are necessary but not sufficient prerequisites for the development of children's sharing behavior.

Role-taking and moral judgments

Just as there have been only a few studies on the relationship between role-taking and moral behavior, few investigators have reported relationships between role-taking and moral judgments (Ambron & Irwin, 1975; Irwin & Ambron, 1973; Moir, 1974; Selman, 1971). It was Selman (1971) who first found that with eight, nine and ten year old children, those who had developed reciprocal role-taking skills were more likely to make moral judgments at the conventional rather than the preconventional level. Reciprocal role-taking ability appeared to be a necessary prerequisite for the development of moral judgments in children. Recently, Moir (1974) found additional evidence using Kohlberg's moral judgment interview with 11 year old girls that not only supports Selman's earlier finding on the association between role-taking (both moral and non-moral) and moral judgments but also indicates that the relationship was found to be independent of conventional verbal intelligence.

It was two years ago in Philadelphia at the last SRCD meetings when Michelle Irwin and Sueann Ambron (1973) reported on the relationships between role-taking and moral judgments in 5 and 7 year olds. In support of Selman's earlier work, Irwin and Ambron found that role-taking and moral judgments were significantly correlated and that the relationship was strongest between cognitive role-taking and intentionality. However, they concluded that their research suggests "that further study is needed with regard to the ontological development of these two concepts (role-taking and moral judgments) in relation to each other" (p. 34). They also suggested that future studies should not only 1) "extend the age range to include five, six and seven year olds" (p. 53), but also 2) study "whether the degree of maturity in moral understanding is related to the degree of maturity in moral behavior during early and middle childhood" (p. 54).

Since Selman (1971) suggested that "the time period during which one chooses

to examine the co-development of these two processes (role-taking and moral judgments) is critical and that it is illogical to anticipate finding a close relationship between role taking and moral judgments at any and all ages" (p. 89), the present cross-sectional study was undertaken to investigate developmental changes in these relationships and to test whether the relationship between role-taking and moral judgments were consistent at different ages. It was hypothesized that the five, six, seven and eight year old children in the present study with better developed role-taking skills would make moral judgments at a more advanced stage than children who have not developed these skills.

Moral judgments and sharing

Although it has been expected that moral judgments and moral behavior would be related, from the time of the classic works of Hartshorne and May (1928-30) researchers have not established a strong relationship between moral reasoning and moral behavior. There has been some support for the hypothesis of a relationship between moral reasoning and cheating behavior (Grim, Kohlberg, & White, 1968; Krebs, 1968; Lehrer, 1967); moral conduct (McLaughlin & Stephens, 1974); and children's prosocial behavior (Rubin & Schneider, 1973; Rushton, 1975; Ugurel-Semin, 1952).

Almost twenty-five years ago in an early study on altruism with children in Istanbul, Ugurel-Semin investigated the relationship between moral behavior and age, sex, social class, family size and moral judgment. Children between 4 and 16 years were asked to divide an unequal number of nuts between themselves and another child. Ugurel-Semin found that generosity increased in children between 6 and 8 years and that the selfish tendency was strongest in children between 4 and 6 years of age. There was a consistency between moral behavior and moral judgments among the children who shared equally and those who were generous. Rubin and Schneider (1973) found a positive correlation between moral judgments and prosocial behaviors among 7 year old children; and recently, Rushton (1975) found that children with higher levels of moral judgments on Piaget type tasks donated more than children with lower levels of moral judgments. As a result of these findings involving moral judgments and children's prosocial behaviors, it was hypothesized that children's sharing and their moral judgments on Piagetian moral dilemmas would be related. Children who make moral judgments at the higher levels of moral reasoning would share more than children who make moral judgments at lower levels of moral reasoning.

Moral judgments: prescriptive and proscriptive

Research on moral judgments has been primarily stimulated by Piaget (1932) and Kohlberg (1958; 1964). Both theorists view moral development in terms of cognitive processes in making moral judgments and both suggest that moral development progresses through a sequence of stages due to changing thought structures which underlie moral concepts. While investigating the child's respect for the rules of social order and the child's sense of justice, Piaget (1932) suggested that it was through the process of organizing and regulating social experiences that a child develops moral structures. According to Piaget, children are limited in their moral judgments by their egocentric thought until around seven years of age. At this time, children advance from the early stage of moral realism to the more advanced stage of moral relativism.

A finding which has been well supported (Boehm & Nass, 1952; Cowan, Langer, Heavenrich & Nathanson, 1969; Johnson, 1962; Piaget, 1932) is that younger children tend to make moral judgments based on the consequences of an act, while older children take into consideration the intentions behind the action. The original interview stories which were used by Piaget (1932) as well as the revised stories which have recently been used (Armsby, 1971; Gutkin, 1972; Hebble, 1971; King, 1971) to study intentionality have involved making judgments on the wrongness of two acts (e.g., Which boy is naughtier? The one who broke one cup or the one who broke fifteen cups?) Since I was interested in prosocial behaviors in children, I asked,... do children use similar bases for making judgments to the rightness or goodness of two acts as they do to the wrongness of two acts?

Since research interests in moral development has shifted from studying proscriptive behaviors such as cheating, stealing and lying to prescriptive behaviors such as donating, sharing and helping, it seems that some of the interest in studying moral judgments might also shift to studying judgments which involve prosocial behaviors. Shure (1968) found developmental changes in children's judgments of fairness, generosity and selfishness, while Baldwin and Baldwin (1970) reported significant increases in adultlike judgments of kindness by children between five and seven years. Researchers (Baldwin & Baldwin, 1970; Shaw & Sulzer, 1964) have suggested that children use intentionality differently under various consequence conditions. While Costanzo, Coie, Grumet and Farnhill (1973) recently found that children's use of intentionality for making moral judgments was different under conditions of positive and negative consequences, their procedure differed from the Piagetian format. Children were asked to make judgments of single actors rather than comparisons of pairs of children. According to Costanzo et al. (1973), "this may have allowed subjects' consideration of intentionality to become more visible, since it did not force the subject to choose between intentionality and consequence bases for judgment" (p. 160).

In the present study, Piagetian type dilemmas which involved both positive and negative consequences were used. It was expected that children would respond differently to moral dilemmas with positive and negative consequence stories. Children's scores for intentionality on moral judgments were expected to increase with age.

In summary, developmental changes in children's sharing were expected to be related to developmental changes in both role-taking ability and moral judgments. While previous studies have reported positive relationships between role-taking and moral judgments (Ambron & Irwin, 1975; Irwin & Ambron, 1973; Moir, 1974; Selman, 1971); moral judgments and sharing (Ugurel-Semin, 1952); and role-taking and altruism (Krebs, Note 1), these studies have only investigated the relationship between two of the three apparently related social processes. When positive relationships were reported for moral judgments, egocentrism and altruism (Rubin & Schneider, 1973), the researchers focused on children at one age rather than obtaining either cross-sectional or longitudinal data. Since Selman (1971) suggested that "the time period during which one chooses to examine the co-development of these two processes (role-taking and moral judgments) is critical and that it is illogical to anticipate finding a close relationship between role-taking and moral judgments at any and all ages" (p. 89), the present cross-sectional study was undertaken to investigate development changes in these relationships and to test whether the relationship between role-taking, moral judgments and sharing were consistent at different ages. Also since there has been

little additional evidence supporting Costanzo et al.'s (1973) finding that moral judgments for positive consequence stories were different from negative consequence stories, children's moral judgments to both positive and negative consequence stories were manipulated in Piagetian moral dilemmas and the relationship between moral judgments and sharing behavior were examined.

Subjects were 40 white children (20 boys and 20 girls) from each of four grades: kindergarten, first, second and third. The mean age at the time of testing (January) for each grade level was 68, 81, 92, and 104 months respectively. The children were attending an elementary school in a rural town (pop. 5468) in central Michigan. According to school administrators, they were average in performance on intelligence and standard achievement tests administered routinely in the state and came from predominantly lower-middle class families. Unfortunately, IQ scores were not available since school policy restricted intelligence testing and the releasing of intelligence test scores in school records.

Each child participated in two experimental sessions. The first was designed to measure children's sharing with a friend and their role-taking skills; while information on their moral judgments and sharing candy with a stranger (which was part of another study in progress) was obtained during the second session.

After asking each child questions about the number of brothers and sisters in his family and the name of the child's best friend at school, each child was given 11 M&M candies in a bag. M&Ms were used since Midlarsky and Bryan (1967) found no relationship between children's preferences for M&Ms and their giving behavior, and because Witryol (1971) found no age or sex differences in preferences for M&Ms as rewards for children in kindergarten, second and fourth grades. The M&Ms were emptied out on the table. The experimenter then said, "Here are some M&M candies. These are for you to have. If you want to you can leave some for _____ (name of best friend). We'll put the one's you want to keep for yourself in this bag and put your name on it. Then we'll put the one's you want to give to your friend in another bag. If you don't want to, you don't have to give your friend any candy." After the child made his decision, the experimenter put the bags of candy aside and said he would give them to the teacher who would give them to the children at lunch.

After the M&Ms were divided, each child was presented with four measures of role-taking ability. The first task required the child to tell a story about a sequence of seven pictures which involved a boy being frightened by a dog, running down a street, and climbing a tree to eat an apple (described by Flavell et al., 1968, p. 71). After telling the story with all seven cards presented, three cards were removed which eliminated the fear of dog motive for climbing the tree. The experimenter then said, "Your teacher has never seen these pictures. What I'd like you to do this time is tell me the story your teacher would tell if she saw these pictures. What would your teacher say is happening in this story?" A three category system used by Selman (1971) was used to score the responses to this role-taking task (see Appendix A).

The second, third and fourth role-taking tasks were an adaptation of a procedure used by Chandler and Greenspan (1972). Each child was presented with three story situations which involved a main character experiencing sadness, anger or

happiness, and a second character who entered the scene too late to know the circumstances arousing these emotions in the main character. While Chandler and Greenspan (1972) used pictured situations, miniature toy children, a dog and a truck were manipulated in the present study. Each child was given an opportunity to assign an emotion to the main character in the story by choosing one from among four pictured emotions and identifying it. The subject was then asked to tell the story from the point of view of the main character and then from the perspective of the naive late comer.

The following is an example of one of the situations. The experimenter gave the following instructions: "Listen to the stories carefully. Then I'll ask you some questions about them." One day a boy and girl were going to the store for their mother to buy a loaf of bread. When they were crossing the street they found a quarter and now they could buy some candy for themselves.

"How do the boy and girl feel now?" (Subject responds)

As they continued walking down the street, a friend came running by and asked them to play a game of hide and seek with a group of children. The boy and girl said no they didn't want to. The friend was surprised that the boy and girl didn't want to play hide and seek. So, the friend had to play with some other children.

The experimenter then asked the subject a series of questions: "Can you tell me what happened in the story from the beginning? What would the friend say happened in the story? Why does the friend think the boy and girl are happy? Why does the friend think the boy and girl don't want to play hide and seek?"

This procedure and similar questions were used for the other two stories. The responses were tape-recorded and later scored by two independent raters. The total role-taking ability score was the sum of the scored responses on the four role-taking tasks.

During the second experimental session each child was presented with six moral judgment dilemmas. Three revised Piagetian stories involving negative consequences which were used by Armsby (1971) were presented along with three stories involving positive consequences (donating, sharing and helping) which were written and pilot tested for the purpose of this study. After each negative consequence story, the subject was asked which of two children he thought was the naughtiest and why he thought he was the naughtiest. After the positive consequence stories, each child was asked which of two children he thought was the nicest and why he thought he was the nicest. The order of presentation of the positive and negative consequence stories were counterbalanced in the study.

An example of a positive consequence dilemma is the following:

Once there was a little girl who wanted to play with a lot of crayons but the crayons were on the top shelf of a bookcase in the playroom. Because the girl was little she could not reach them. Her friend Sally was playing a game and came running into the room. Sally accidentally bumped into the bookcase and knocked 15 crayons off the top shelf. The little girl picked up the fifteen crayons and was happy that she could now color in her book.

Compare Sally with . . . . .

Once there was a little girl who wanted a red crayon which was on the top of the refrigerator. The little girl couldn't reach the crayon because she was too short. Her friend Jane came into the room and saw her reaching for the crayon. Jane wanted to reach the crayon and give it to the little girl. Jane gave the little girl the crayon and the little girl started to color in her book.

"Which of the two girls do you think was the nicest? Why do you think she was the nicest?"

Responses to these stories were also tape-recorded and later scored by two independent raters. Points were assigned for each moral judgment response with zero points given for responses based on the consequences of an act and one point given for responses which took intentionality into account. After responding to all six dilemmas, the children participated in a separate but related experimental study which investigated the effects of reward-deservedness on children's sharing with a stranger (see Olejnik, 1974).

Since positive correlations were found between age and sharing with a friend ($r = .20$, $p < .01$); age and role-taking ($r = .30$, $p < .001$); and age and moral judgments ($r = .34$, $p < .001$), a general summary of the intercorrelations found among role-taking, moral judgments and sharing, with age partialled out, is presented in Table 1. The data are presented separately for boys and girls in Table 2. In general these results are consistent with previous studies.

Role-taking and moral judgments

Role-taking ability and the use of intentionality for making moral judgments were positively correlated ($r = .43$, $p < .001$), and these correlations were similar for both boys ($r = .42$, $p < .001$) and girls ($r = .49$, $p < .001$). Since Selman (1971) indicated that role-taking and moral judgments might not be consistently related at all ages, a closer examination of this relationship between role-taking and moral judgments was done for each grade (see Table 3). Children with scores on the role-taking tasks between zero and six which was below the median ($\bar{x} = 6.725$) for role-taking scores across all grades were classified as low role-taking while those with scores greater than seven were classified as high role-taking ability. Since responses to the moral judgment dilemmas were scored either zero for consequences and one for intentionality, subjects were classified as high in moral judgments only if they focused on intentionality for at least four of the six moral judgment stories. The mean score for intentionality across all conditions was 3.96. Children who focused on intentionality for fewer than four stories were classified as low in moral judgments.

A summary of the chi-square analyses of the relationship between role-taking and moral judgments at each grade (see Table 3) indicates that the relationship is significant for children in kindergarten, first, second and third grades. Children between five and nine years of age with better developed role-taking skills were more likely to use intentionality when making moral judgments. Greater role-taking ability is related to more advanced stages of moral judgment. These findings not only confirm and support previous research (Irwin & Ambron, 1973; Moir, 1974; Rubin & Schneider, 1973; Selman, 1971) but also extend

the results to younger children and to moral judgments on Piagetian dilemmas.

Role-taking and sharing

As presented in Table 1, role-taking ability was correlated with sharing with a friend ($r = .66$, $p < .001$); sharing with a stranger ($r = .24$, $p < .01$); and total sharing ($r = .49$, $p < .001$). While the relationship between role-taking and sharing with a friend was significant for both boys ($r = .64$, $p < .001$) and girls ($r = .69$, $p < .001$); the correlation between role-taking and sharing with a stranger was significant only for boys ($r = .32$, $p < .01$). A more detailed analysis was done to examine the relationship between role-taking and sharing for both boys and girls in each grade (see Table 4).

Since the average number of candies shared with a friend was 3.55, children who shared less than the median, four, were considered low in sharing while those who shared four or more were classified as high in sharing with a friend. The number of boys and girls in each grade with high or low role-taking skills who were either high or low in sharing with a friend are presented in Table 4.

Fisher exact probabilities (see Siegel, 1956) for each group are listed. Children with high role-taking skills tended to share more than children with low role-taking skills. This finding was consistent for both boys and girls at each grade level. Only twenty-eight of the children actually were generous and gave away more than half of their candy to a friend. When the number of candies shared with a friend are examined in terms of being generous (giving more than half away) or being selfish (keeping more than half), it becomes more apparent (see Table 5) that role-taking ability is a necessary but not sufficient prerequisite for generosity. Only 1 kindergarten girl with low role-taking skills was generous, while the other 27 "generous" children all had high role-taking skills.

Moral judgments and sharing

The correlations presented in Tables 1 and 2 indicate that moral judgments and sharing with a friend are positively related ($r = .44$, $p < .001$). Although the relationship between moral judgments and sharing with a friend was significant for both boys ($r = .52$, $p < .001$) and girls ($r = .39$, $p < .001$), only for boys was there a small positive correlation between moral judgments and sharing with a stranger ($r = .15$, $p < .05$).

A more detailed analysis was done to determine the relationship between moral judgments and sharing for both boys and girls in each grade (see Table 6). The number of children with high or low moral judgment scores who were either high or low in sharing with a friend are presented in Table 6 with Fisher exact probabilities for each group listed. In almost every condition, children with high moral judgment scores tended to share more than children with low moral judgment scores. When the children are classified as either selfish or generous (see Table 7), it appears that except for the four girls in the first and second grades, high moral judgments seem to be a necessary but not sufficient prerequisite for generosity.

Sex and age differences

Some interesting results were obtained from an analysis of age and sex

differences in the development of role-taking skills, moral judgments and children's sharing, as well as an analysis of the effects of positive and negative consequences on moral judgments. A summary of the mean scores and standard deviations for role-taking, moral judgments and sharing for boys and girls in each grade is presented in Table 8.

Children's intentionality responses on the moral judgment stories were analyzed by a 2 (sex of subject) X 4 (grade) X 2 (story consequences) analysis of variance with repeated measures. A summary of this analysis is presented in Table 10. There was a significant effect for grade (age) on the use of intentionality for making moral judgments ($F = 5.56$; $df = 3,144$; $p < .005$). As hypothesized and consistent with previous research, older children were more likely to use intentionality as a basis for making moral judgments, while younger children tended to focus on the consequences. Newman-Keuls test of the difference between age groups indicated that the moral judgment scores of the third graders were significantly different from all other grades. The first and second grades were significantly different from kindergarten and there was no difference between first and second grades. There was also a significant effect for the story consequences on intentionality responses ($F = 34.18$; $df = 1,144$; $p < .001$). Children were more likely to use intentionality as a basis for making moral judgments when the dilemmas involved positive consequences rather than negative consequences. These data not only confirm findings reported by Costanzo, Cole, Grument, and Farnill (1973) that children use intentionality as a basis for making moral judgments differently for positive and negative consequences stories, but also extend the findings to moral dilemmas using Piagetian stories. As suggested by Costanzo et al. (1973), one possible reason why the children may focus on intentionality for positive consequence stories at a younger age is because parents or other socializing agents are more likely to take into account the child's intention when rewarding children for good behavior and punishing bad behavior more often on the basis of the consequences of an act. Although Piaget (1932) suggested that parents influenced children's development of moral judgments, little research has been done to investigate that relationship. Further investigations of the development of moral judgments in children should take into consideration both positive and negative consequences in moral dilemmas as well as parental socialization techniques.

The data on role-taking and sharing were analyzed by several 2 (sex of subject) X 4 (grade) analyses of variance. The summaries of these analyses are presented in Tables 9 and 11. There were significant effects for sex of subject ($F = 3.92$; $df = 1,152$; $p < .05$) and grade ($F = 5.78$; $df = 3, 152$; $p < .025$) on role-taking scores (see Table 9). While girls had higher role-taking scores than boys at each grade, individual comparison of means (Winer, 1962, p. 238) revealed that only in the third grade was there a significant difference in the role-taking scores between boys and girls ($F = 4.19$; $df = 1,152$; $p < .05$). A test of the differences in role-taking scores between age groups indicated that while the scores between first, second and third grades were not significantly different from each other, they were significantly different from the scores of children in kindergarten. The finding that role-taking scores increased with age is consistent with previous research. It is not clear why the sex differences were found since previous research has not reported any differences.

There was also a significant effect for sex of subject on sharing with a friend ($F = 5.51$; $df = 1,152$; $p < .025$). While girls shared more M&Ms with a friend than boys at each grade, an individual comparison of the means indicated that only in kindergarten was the difference between boys and girls statistically significant ($F = 3.91$; $df = 1,152$; $p < .05$). As hypothesized, there was a significant effect for age on sharing with a friend ($F = 3.74$; $df = 3, 152$; $p < .025$), although it was the first and third graders and (not second graders) who shared significantly more M&Ms than children in kindergarten.

Measures of role-taking, moral judgments and sharing

The intercorrelations of each of the four role-taking tasks compared to the total role-taking scores were r = .65, .88, .84, and .86 respectively. These correlations indicate internal reliability for the items on the role-taking task. The intercorrelations for each of the moral judgment stories and the total moral judgment score were higher for the three negative consequence stories (r = .75, .73, and .77) than for the three positive consequence stories (r = .55, .57, and .55) respectively. Scores on the negative and positive consequence items were positively correlated (r = .33, $p < .001$). Children were generally consistent on both the role-taking tasks and the moral judgments. The inter-rater reliabilities for the two independent raters were .95 for the role-taking scores and .93 for the moral judgment scores. There was also a positive correlation between the two sharing measures (r = .41, $p < .001$). Children who shared M&Ms with their friend were also likely to share M&Ms with a stranger.

Two limitations of the present study were a lack of information on IQ (MA) scores of the children and the fact that in cross-sectional studies age and cohort effects are confounded. Although it is expected that IQ covaries with role-taking and moral judgments, in previous studies even when IQ (MA) was controlled, somewhat reduced relationships were still found between role-taking and moral judgments.

In general, the hypotheses of the present study regarding the relationships between role-taking, moral judgments and sharing behavior appear substantially confirmed. Although there is no direct evidence for a cause-effect relationship for role-taking or moral judgments on sharing, there is evidence that cognitive thought processes are related to children's sharing behavior. The present study was valuable not only in demonstrating these relationships but also extending the findings of previous investigators to include younger children at different ages and with different tasks. The study has contributed additional data to the systematic investigation of the impact of cognitive development on social behavior.

Although there is an apparent increase with age in children's sharing behavior and children appear to behave more altruistically, there is need for short-term longitudinal data as well as additional information on the motives of the children for sharing when studying children's prosocial behavior. Future studies might attempt either cross-lagged panel analysis techniques with this correlational data or study the effects of experimental manipulation of training moral judgments and/or role-taking skills on altruistic behavior. Also, some of the recent work by Selman and Damon (1975) on role-taking and justice can be appropriately adapted to further study cognitive factors related to the development of prosocial behaviors in young children.

APPENDIX A

Scoring for role-taking tasks

A three category system used by Selman (1971) was used to score the responses to the seven picture story task. Category 1 included responses which indicated that the dog frightened the boy and chased him up the tree, as well as a failure to just tell a four pictured story. Category 2 included responses which indicated that the subject could tell a straight four-pictured story but maintained that the dog frightened the boy up the tree when asked why the teacher said the boy was climbing the tree. Category 3 included the responses which told an accurate four-pictured story as well as left out the motivational force of the dog frightening the boy. No points were assigned to responses in Category 1, one point to Category 2 and two points to Category 3 responses.

In each of the three naive-late-comer stories, responses which accurately described the feelings of the main character in the story were assigned one point. Responses to the question "what would the friend say happened in the story?" which were included were scored for the amount of provided information included. Any responses including additional information which was unknown to the late-comer in the story (e.g., the dog was hit by the truck) were assigned zero points. Responses which did not include "privileged" information were assigned one point (see Chandler & Greenspan, 1972). In addition, responses to questions about the emotional state of the main character from the perspective of the late-comers were scored zero for including privileged information and one for responses which did not mention the prior information.

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TABLE 1

SIGNIFICANT INTERCORRELATIONS BETWEEN MEASURES OF ROLE-TAKING, MORAL JUDGMENTS AND SHARING, WITH AGE PARTIALLED.
(N = 160)

MEASURES	1	2	3	4	5
1. Sharing with friend	--				
2. Sharing with stranger	.41**	--			
3. Sharing total	.78**	.89**	--		
4. Role-taking	.66**	.24**	.49**	—	
5. Moral judgments	.43**	.15**	.32**	.40**	—

* p < .05
** p < .001

TABLE 2

INTERCORRELATIONS BETWEEN MEASURES OF ROLE-TAKING, MORAL JUDGMENTS AND SHARING FOR BOYS AND GIRLS WITH AGE PARTIALLED.
(N = 80)

MEASURES	1	2	3	4	5
1. Sharing with friend	—	.51**	.83**	.64**	.52**
2. Sharing with stranger	.30**	—	.90**	.32**	.38**
3. Sharing total	.72**	.88**	—	.53**	.51**
4. Role-taking	.69**	.15	.45**	—	.42**
5. Moral judgments	.39**	-.07	.14	.49**	—

NOTE: Correlations for boys in the upper half of the matrix and correlations for girls in the lower half of the matrix.

** p < .001

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TABLE 3

SUMMARY OF CHI-SQUARE ANALYSES: RELATIONS BETWEEN ROLE-TAKING (RT) AND MORAL JUDGMENTS (MJ) AT EACH GRADE

	Low Role-Taking		High Role-Taking			
	Low MJ	High MJ	Low MJ	High MJ	χ^2	p
Kindergarten	19	7	5	9	3.848	.05
First	10	7	5	18	4.262	.05
Second	13	6	6	15	4.962	.05
Third	9	6	4	21	6.387	.025
Totals	51	26	20	63	28.726	.001

TABLE 4

NUMBER OF BOYS AND GIRLS IN EACH GRADE WITH HIGH OR LOW ROLE-TAKING SKILLS WHO WERE EITHER HIGH OR LOW IN SHARING

		Low Role-Taking		High Role-Taking		
		Low Sharing	High Sharing	Low Sharing	High Sharing	p
Kindergarten	boys	11	2	2	5	.05
	girls	10	3	1	6	.025
First	boys	8	1	2	9	.005
	girls	6	2	0	12	.01
Second	boys	7	3	2	8	.025
	girls	9	0	1	10	.005
Third	boys	7	4	0	9	.01
	girls	3	1	1	15	.005

TABLE 5

NUMBER OF BOYS AND GIRLS IN EACH GRADE WITH HIGH OR LOW ROLE-TAKING SKILLS WHO WERE EITHER SELFISH OR GENEROUS WITH A FRIEND

		Low Role-Taking		High Role-Taking	
		Selfish	Generous	Selfish	Generous
Kindergarten	boys	13	0	6	1
	girls	12	1	5	2
First	boys	9	0	8	3
	girls	8	0	5	7
Second	boys	10	0	9	1
	girls	9	0	5	6
Third	boys	11	0	6	3
	girls	4	0	12	4
Totals	boys	43	0	29	8
	girls	33	1	27	19

TABLE 6

NUMBER OF BOYS AND GIRLS IN EACH GRADE WITH HIGH OR LOW MORAL JUDGMENT SCORES WHO WERE EITHER HIGH OR LOW IN SHARING

		Low Moral Judgments		High Moral Judgments		
		Low Sharing	High Sharing	Low Sharing	High Sharing	p
Kindergarten	boys	7	6	6	1	
	girls	8	2	3	7	.05
First	boys	7	1	3	9	.005
	girls	5	3	1	11	.025
Second	boys	8	2	1	9	.005
	girls	5	2	5	8	
Third	boys	5	2	2	11	.025
	girls	3	2	1	14	.05

TABLE 7

NUMBER OF BOYS AND GIRLS IN EACH GRADE WITH HIGH OR LOW MORAL JUDGMENT SCORES WHO WERE EITHER SELFISH OR GENEROUS WITH A FRIEND

		Low Moral Judgments		High Moral Judgments	
		Selfish	Generous	Selfish	Generous
Kindergarten	boys	13	0	6	1
	girls	10	0	7	3
First	boys	8	0	9	3
	girls	6	2	7	5
Second	boys	10	0	9	1
	girls	7	2	7	4
Third	boys	8	0	9	3
	girls	5	0	11	4

TABLE 8

MEANS AND STANDARD DEVIATIONS FOR ROLE-TAKING, MORAL JUDGMENTS, AND SHARING

		Kindergarten		First		Second		Third	
		boys	girls	boys	girls	boys	girls	boys	girls
Role-taking	MEAN	5.40	5.60	6.65	7.05	6.50	7.30	6.90	8.40
	SD	2.11	1.93	2.66	2.33	2.11	2.54	2.59	2.16
Moral Judgments	MEAN	1.00	1.35	1.80	1.60	1.60	1.60	2.00	2.50
(negative consequences)	SD	1.17	1.31	1.32	1.27	1.31	1.27	1.30	1.10
Moral Judgments	MEAN	1.90	2.00	2.05	2.60	2.20	2.40	2.55	2.60
(positive consequences)	SD	1.07	1.07	.89	.82	.95	.82	.89	.94
Moral Judgments	MEAN	2.90	3.35	3.85	4.20	3.80	4.00	4.55	5.10
(totals)	SD	1.83	2.00	1.84	1.85	1.82	1.84	1.85	1.41
Sharing with	MEAN	2.10	3.30	3.55	4.40	3.45	3.50	3.60	4.55
Friend	SD	2.02	2.18	1.98	1.96	1.90	2.42	2.33	1.50
Sharing with	MEAN	2.65	4.25	4.30	3.55	3.25	3.65	3.80	4.20
Stranger	SD	2.08	3.93	2.70	2.89	3.04	2.28	2.98	2.97
Sharing Total	MEAN	4.75	7.55	7.85	7.95	6.70	7.15	7.40	8.75
	SD	3.39	4.90	3.81	3.61	4.22	4.03	4.65	3.70

Note: N = 20 Subjects in each cell.

TABLE 9

SUMMARY OF ANALYSIS OF VARIANCE OF ROLE-TAKING SCORES.

SOURCE	df	MS	F
Sex of subject (A)	1	21.02	3.92*
Grade (B)	3	31.03	5.78**
A X B	3	3.29	.61
Error	152	5.37	

* $p < .05$
** $p < .005$

TABLE 10

SUMMARY OF ANALYSIS OF VARIANCE OF INTENTIONALITY RESPONSES ON MORAL JUDGMENT STORIES.

SOURCE	df	MS	F
Sex of subject (A)	1	3.00	1.72
Grade (B)	3	9.68	5.56**
A X B	3	.11	.06
Error (between)	144	1.74	
Story Consequences (C)	1	29.40	34.18***
A X C	1	.08	.09
B X C	3	.77	.89
A X B X C	3	1.42	1.65
Error (within)	144	.86	

** $p < .005$
*** $p < .001$

TABLE 11

SUMMARY OF ANALYSIS OF VARIANCE OF SHARING WITH A FRIEND

SOURCE	df	MS	F
Sex of subject (A)	1	23.25	5.51**
Grade (B)	3	15.78	3.74**
A X B	3	2.47	.58
Error	152	4.22	

** $p < .025$